

# A Secure Online Gaming Portal With Reward System

Anas Sayyed<sup>1</sup>, Rashmi Jadhav<sup>2</sup>, Priyanka Gurnani<sup>3</sup>, Bikash Narang<sup>4</sup>, Arthi C.I.<sup>5</sup>

Department of Computer Engineering, Vivekanand Education Society's Institute of Technology, Mumbai  
anas.sayyad@ves.ac.in<sup>1</sup>, rashmi.jadhav@ves.ac.in<sup>2</sup>, priyanka.gurnani@ves.ac.in<sup>3</sup>, bikash.narang@ves.ac.in<sup>4</sup>,  
arthi.ci@ves.ac.in<sup>5</sup>

## ABSTRACT

Online games have the trend to become more and more complex. A big part of cyber crime is reported as to be thefts and cheats in online gaming. In this paper, the methodology and implementation details of developing and securing online gaming portal with reward system is discussed. There will be two types of games on the website- Some fun games will be deployed along with games that focuses on teaching something important to users. The project is concerned to have a stable, flexible and reliable server platform that could handle so many players in the game. It's availability to all internet users makes it susceptible to hackers and cheaters. The objective of this project is exploring the vulnerabilities in current system and taking preventive measure against them to make the system immune to malicious activities.

Keywords- online gaming; interactive learning , rewards, leaderboards single player; multiplayer;

## 1. INTRODUCTION

The rising prominence of Flash and Java prompted an Internet transformation where sites could use streaming video, sound, and an entire new arrangement of client intuitiveness. At the point when Microsoft started bundling Flash as a part of IE, the Internet started to move from an information/data resources to offer on-demand entertainment. This transformation provided website owners an opportunity to offer exciting gaming experience to web surfers.

The online game is a video or computer game that is played on some kind of network. The network always refers to Internet but games can be deployed on many other types of network. The design of online games can just be simple text-based environments or incorporation of high quality graphics and creating virtual worlds. The influence of online components within a game can be inclusion of minor features, such as online leaderboards. Internet connectivity in a game adds a new opportunity for gamers as it allows players to search and play against other players from around the world (in a multi-player game). Gaming is a very popular addiction among all age groups but, Online gaming is very much famous in teenagers and adults. Recent studies show that gaming is one of the top activities played with pleasure by 9-16 year olds online, where it shows that gaming is more famous than social networking. From games related to sports to mission based games and quests inspiring users to finish challenges, interactive games serves a wide range of interests, and can enable users to link up and play together. Along with the games intended to provide entertainment to the users, Games that will help user to learn concepts like programming will also be uploaded on the system. The gaming experience will provide the viewers with entertainment as well as knowledge. Online games can provide fun and a social form of entertainment often give support to unity and aid when played with other individuals. Like offline games, they can have educational benefits, and be used, for

example, to develop skills and understanding.

An online game has two important elements, The entire architecture is divided into server side and the client side technology. The design of server architecture is the key to develop an online game successfully. There are two key factors on the success or failure of the operation and management of online games: One is the playability of the game itself and post operation and management; the other is to ensure the stability and efficient operation of the entire system from the architecture. From the current situation of the major online game developer and operator, use of server clusters to provide online game services is the preferred solution. Therefore, the cluster technology based framework for multi-layer software architecture has become critical to the success of the online game development, there is only one stable, reliable platform for online games in order to attract and sustain the majority of gamers. This project is based on the design and development of online game server, analysis and research the online game server architecture thoroughly. As the system will be available to users across the world, this makes it susceptible to malicious hackers and cheaters. To overcome this existing vulnerabilities of the system will be studied. Steps will be taken to nullify this weakness and make the system immune to such activities.

## 2. LITERATURE SURVEY

### (A) EXISTING SYSTEM

There are many popular gaming portals currently which provide single player and multiplayer games but most of them just use it to generate revenue for themselves. Either they bombard users with ads or the users are required to pay some fees in order to play the game. The game that are deployed aren't originally developed and has poor quality gameplay and graphics.

Also the portal faces problems like low performance, it is really difficult to integrate multiplayer environment with low waiting or response time. The biggest drawback of current system is the security they provide. According to Cybercrimes report, 55% of the total cases reported contains issues related to cheat and thefts in online gaming. Hackers cheat the system to get in game rewards like virtual rewards or in game inventory.

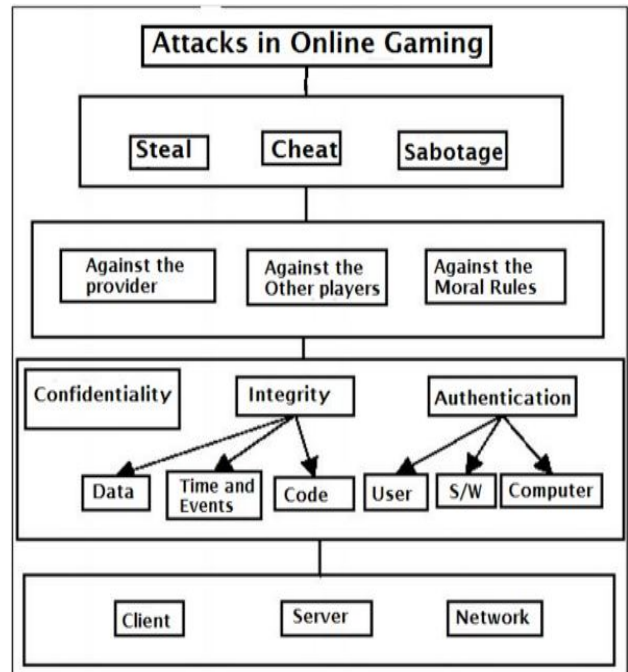


Fig 1.a Attacks to Online Games

There are many attacks that can be done to Steal, Cheat or Sabotage the current gaming portals. The attacks can be primarily classified as against the system, against other players or against the rules that have been defined for using the system. The attacks are directed to hinder the confidentiality, integrity and to cheat authentication mechanisms. Confidential information like user profile and passwords can be hacked. Attacks to integrity of the system can include modification of data stored in game or change of any code use to execute them on a web portal. Hackers can cheat the authentication protocols of the current

system to get into the site without passing through verification and validation tests.

There isn't a proper balance between entertainment and knowledge provided by the games. Also gamers aren't provided with any share of the revenue generated through web portal traffic. Ads are displayed to them but they won't get anything in return. The reward system is pretty poor and the gamers spent hours and hours just to fill in pockets of the web portal owners.

### **(B) PROPOSED SYSTEM**

The proposed system will have an easy to use registration system, users can also play the games and stay anonymous if they don't want to reveal their identity. For updating their scores to online leaderboards, registration will be mandatory. The web portal will contain exciting single players and multiplayer games originally developed. It will be ensured that the gaming experience is exceptional. There will be fun games and educational games as well teaching stuff like programming in Html, Css, Java, etc. Gamers can gain knowledge as well as take a break and enjoy some games. User won't be bombarded with ads all over but some ads will be displayed in sidebar and it will be ensured that this doesn't affect their gaming experience. The generated revenue will be shared with the gamers. Top score of all deployed games will get monthly rewards. There will be a referral system that enables users of the system to invite other players. The referrals will earn points that can be used to purchase in-

game item such as head-starts or power-ups in single player gaming mode. Once the system is implemented and is running bug free, Testing of existing vulnerabilities will be done. The weaknesses related to security perspective will be analysed and preventive measure will be taken to nullify them. The aim of this project is to make the system immune to malicious activities done for cheating other players or entire system.

### **3.METHODOLOGY**

The system is intended to be used by 3 type of users which is represented in Fig 2.a , They will have immediate and direct involvement with game

- A) Game designers who will upload the games and ask for edits in any existing games. They can also modify the games which they have uploaded. They can include new instructional elements within game play or new versions of existing games.
- B) Users of the system who are using our portal for playing games. They can register for an account and also edit or manage their profiles. They will be also given access to leaderboards.
- C) System administrator who will manage the existing games , approve new games, view reports on top scorers, clear rewards and handle competitions. They can also view the traffic reports and other statistical data.

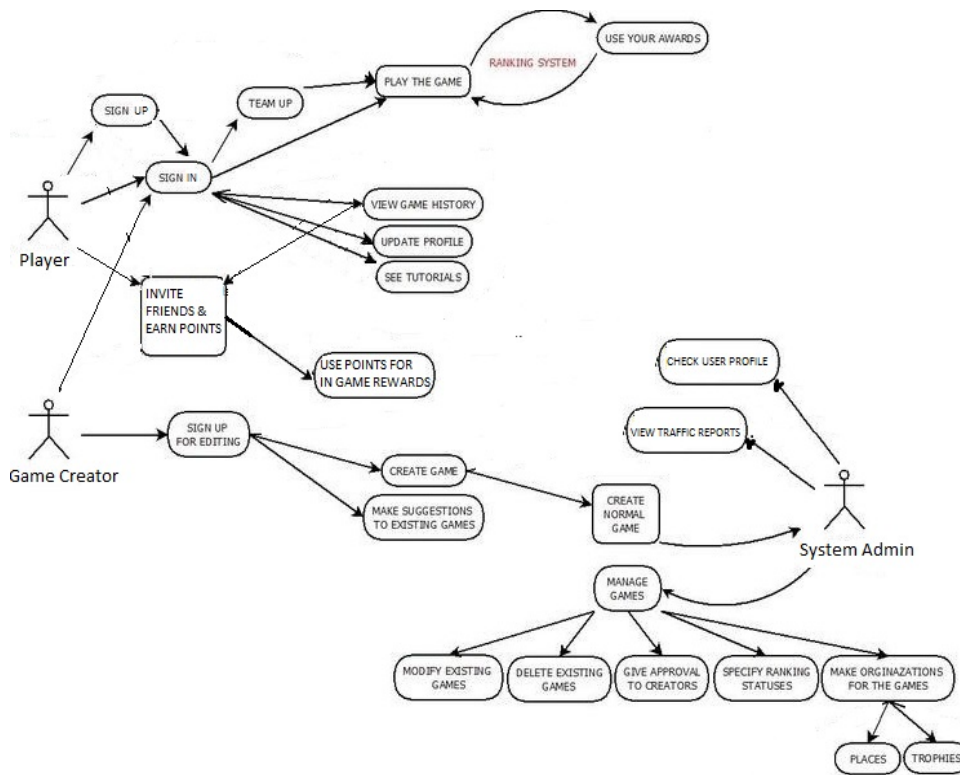


Fig 2.a Use Case diagram of the system

The flow of the system is depicted in Fig 2.b The user first needs to login. If he provides a correct set of username and password then he will be able to login into the system. A main menu will be displayed which will have options to search and play a game, or account management. Also he can view the leaderboards and some statistics related to games. If the user wants to play any game then he can load it. They can select between single-player or multiplayer mode if both the options are

available for a particular game. In single-player they compete against an Artificial agent and in multiplayer mode they can compete with another player. The game can be paused in between and resumed again. Once the game is completed or the player loses he can decide whether he wants to quit and logout or he can choose to play again. Users can also view their gaming history stats and update their personal information through account management.

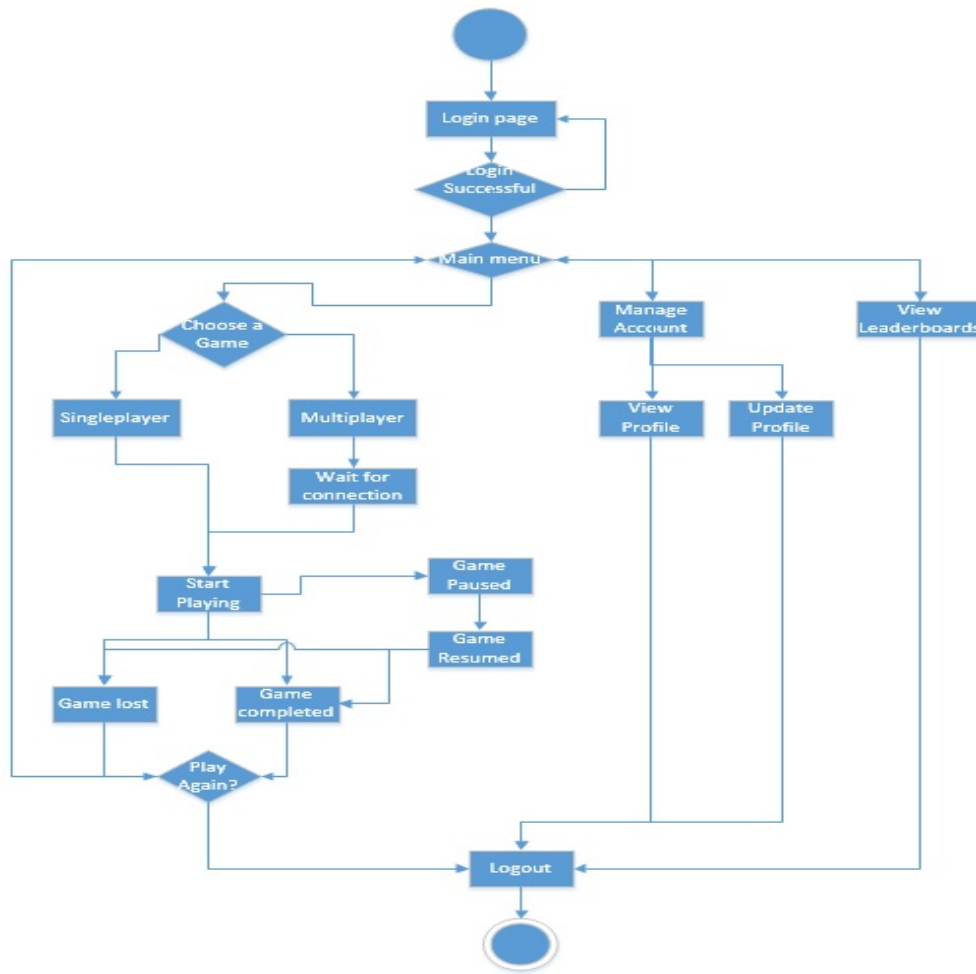


Fig.2.b Sequence diagram of the system

#### 4.IMPLEMENTATION

The tools that are required for implementation of the system are-

**A)Unity-Game Engine** (To develop game)

Unity is an adjustable and mighty development platform for creating multiplatform 3D and 2D games and bilateral experiences. It's a complete environment for anyone who aims to build a business on creating high-end content and connect to enthusiastic players and customers.

**B)Wordpress** (For development of Web Gaming Portal)

Our games will be deployed on a website, so that it is accessible to the large base of gamers spread across the world. Wordpress is the leading hosting and website building solution provider. It has both free and paid hosting plans.

**C)Adobe Photoshop CS6** (For development of graphical elements and textures)

Photoshop is the leading tool used for creating and editing all graphical elements. It is used by most of the professional artists and also by newbies to the graphical world. Adobe Photoshop CS6 is the latest version of the Photoshop series and has many new functionalities.

**D) Wordpress Plugins** (For setting up mail servers and all other minor requirements)

Various wordpress plugins will be required to setup minor features like mail servers use to contact the users, registration system and account management.

Playing Games - Bono, S.; Caselden, D.; Landau, G.; Miller, C. Security & Privacy, IEEE Year: 2009, Volume: 7, Issue: 3  
[5] The Online Game Secure Transaction Platform Based on Cooperation Model- Zhang Ming-Kai; Zhang Yi-Chun; Yang Cheng; Lan Xiao E-Product E-Service and E-Entertainment (ICEEE), 2010 International Conference on Year: 2010

## 5. CONCLUSION

Thus the project aims to create multiple single player and multiplayer games, some providing entertainment whereas some making players learn new stuff, deploying them on a website, running security tests and make it resistant to cheating or other malicious activities.

The system available to users all across the world. This makes it susceptible to a huge number of hostile users as well, So we have many challenges waiting in our way to success.

A number of factors contribute to the success of a game project from an operational perspective.

## 4. REFERENCES

- [1] Online Games: Categorization of Attacks- Lyhyaoui, Y.; Lyhyaoui, A.; Natkin, S. Computer as a Tool, 2005. EUROCON 2005. The International Conference on Year: 2005, Volume: 2
- [2] Towards Designing Secure Online Games- Yee, G.; Korba, L.; Ronggong Song; Chen, P.S. Advanced Information Networking and Applications, 2006. AINA 2006. 20th International Conference on Year: 2006, Volume: 2
- [3] Acceptance of e-cash and usage implications of associated system: The case of mobile-online gaming services - E.W.K.; Westland, J.C. Supply Chain Management and Information Systems (SCMIS), 2010 8th International Conference on Year: 2010
- [4] Reducing the Attack Surface in Massively Multiplayer Online Role-